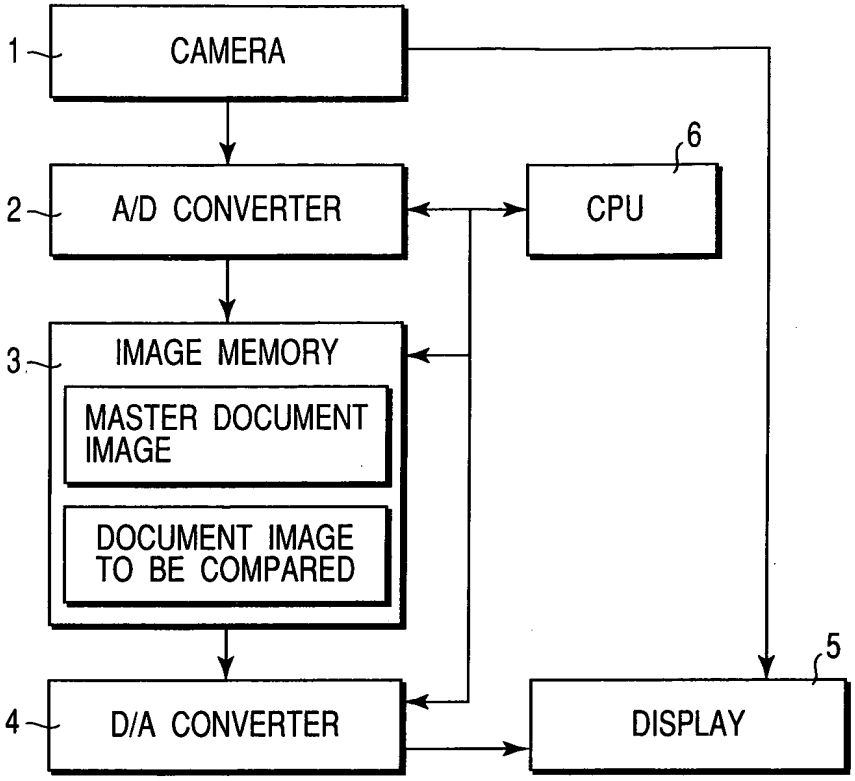

1
CAMERA
6
2
A/D CONVERTER
CPU
3
IMAGE MEMORY
MASTER DOCUMENT IMAGE
DOCUMENT IMAGE TO BE COMPARED
5
4
D/A CONVERTER
DISPLAY

FIG. 1

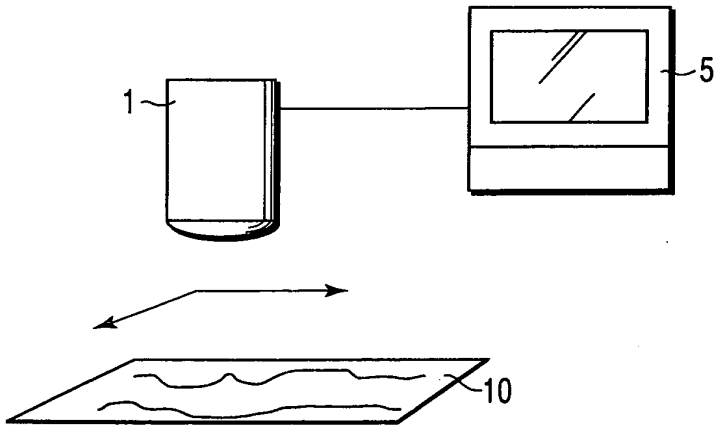

1
5
10

FIG. 2

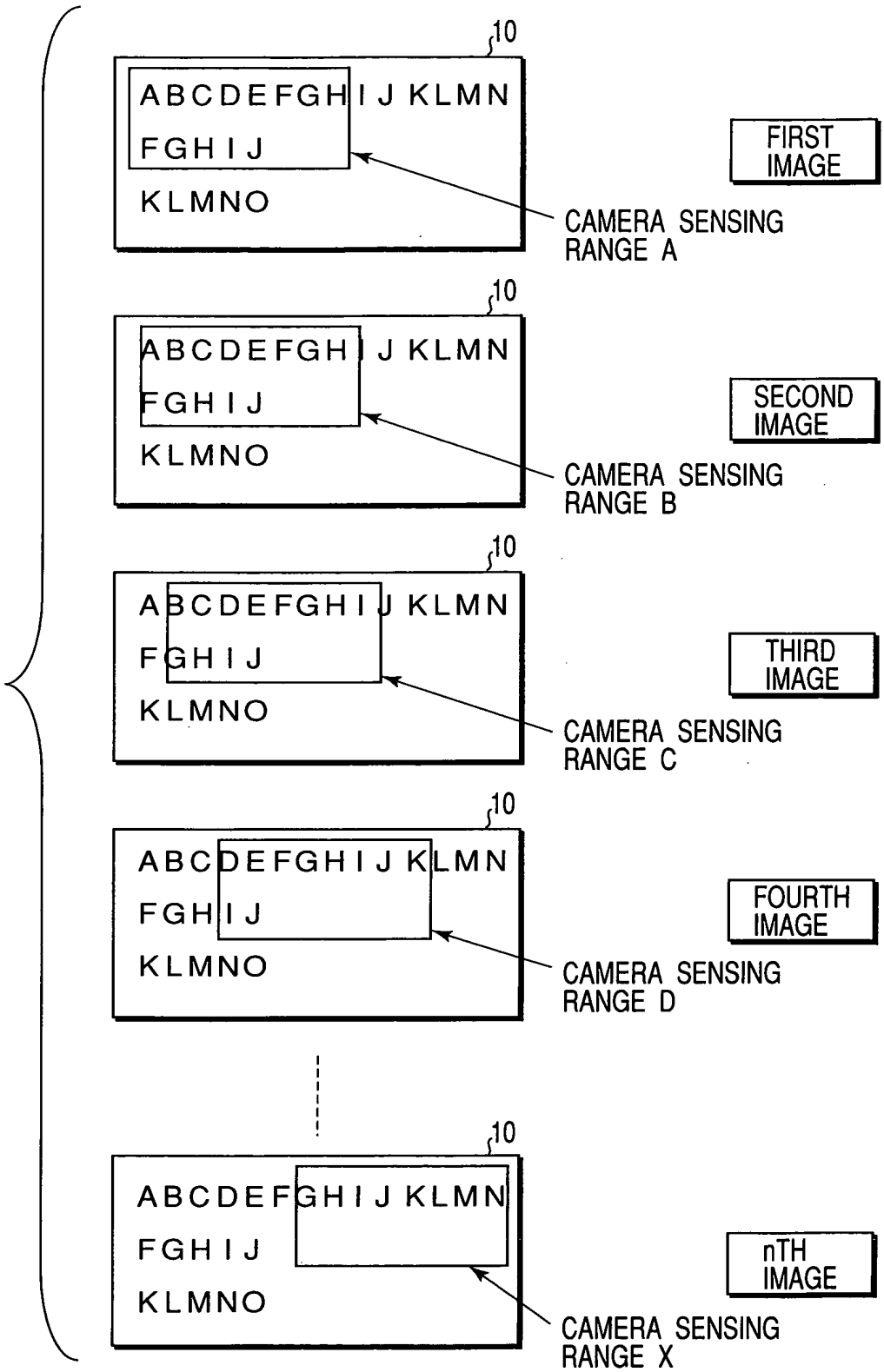

10
ABCDEFGHIJKLMN
FGHIJ
KLMNO
FIRST IMAGE
CAMERA SENSING RANGE A
10
ABCDEFGHIJKLMN
FGHIJ
KLMNO
SECOND IMAGE
CAMERA SENSING RANGE B
10
ABCDEFGHIJKLMN
FGHIJ
KLMNO
THIRD IMAGE
CAMERA SENSING RANGE C
10
ABCDEFGHIJKLMN
FGHIJ
KLMNO
FOURTH IMAGE
CAMERA SENSING RANGE D
10
ABCDEFGHIJKLMN
FGHIJ
KLMNO
nTH IMAGE
CAMERA SENSING RANGE X

FIG. 3

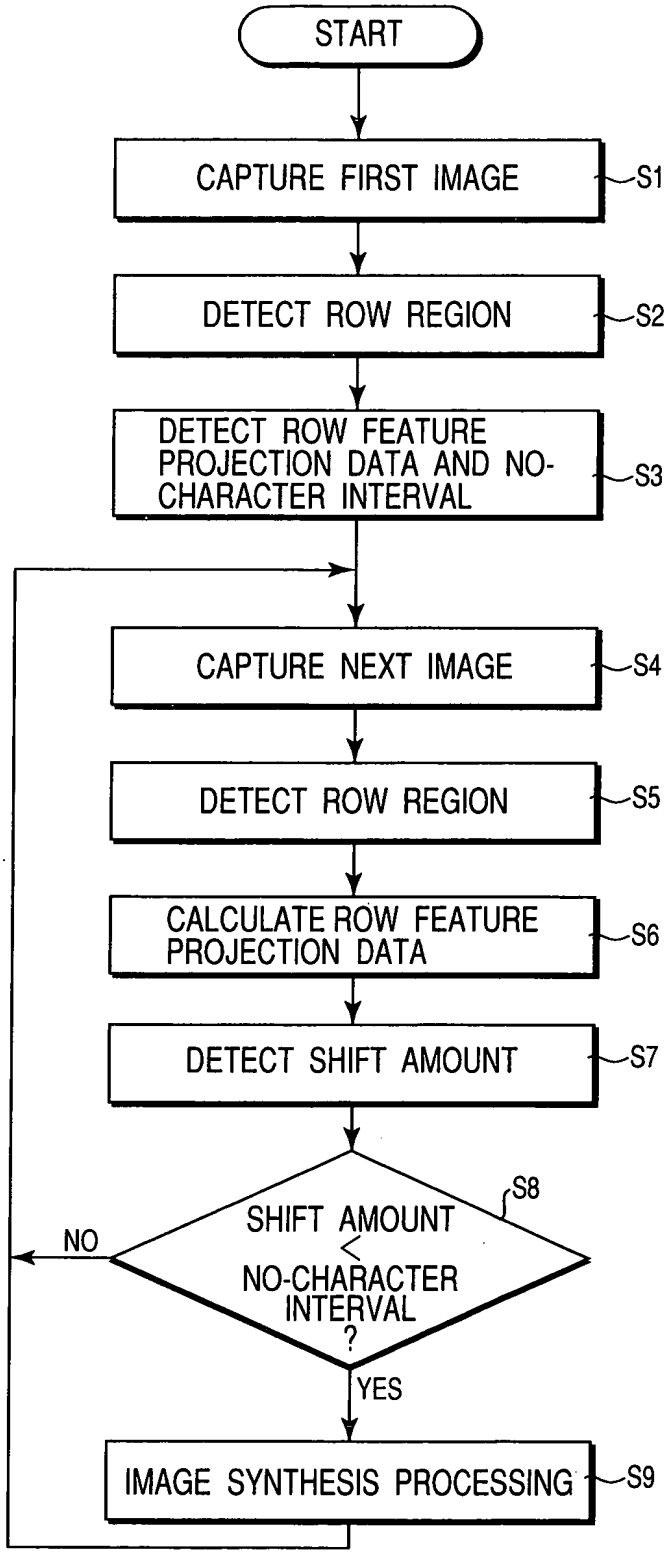

START
CAPTURE FIRST IMAGE
S1
DETECT ROW REGION
S2
DETECT ROW FEATURE PROJECTION DATA AND NO-CHARACTER INTERVAL
S3
CAPTURE NEXT IMAGE
S4
DETECT ROW REGION
S5
CALCULATE ROW FEATURE PROJECTION DATA
S6
DETECT SHIFT AMOUNT
S7
SHIFT AMOUNT < NO-CHARACTER INTERVAL ?
S8
NO
YES
IMAGE SYNTHESIS PROCESSING
S9

FIG. 4

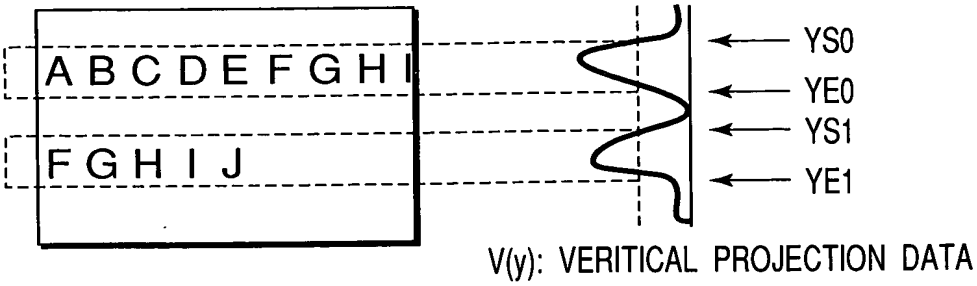

A B C D E F G H I
F G H I J
YS0
YE0
YS1
YE1
V(y): VERITICAL PROJECTION DATA

FIG. 5

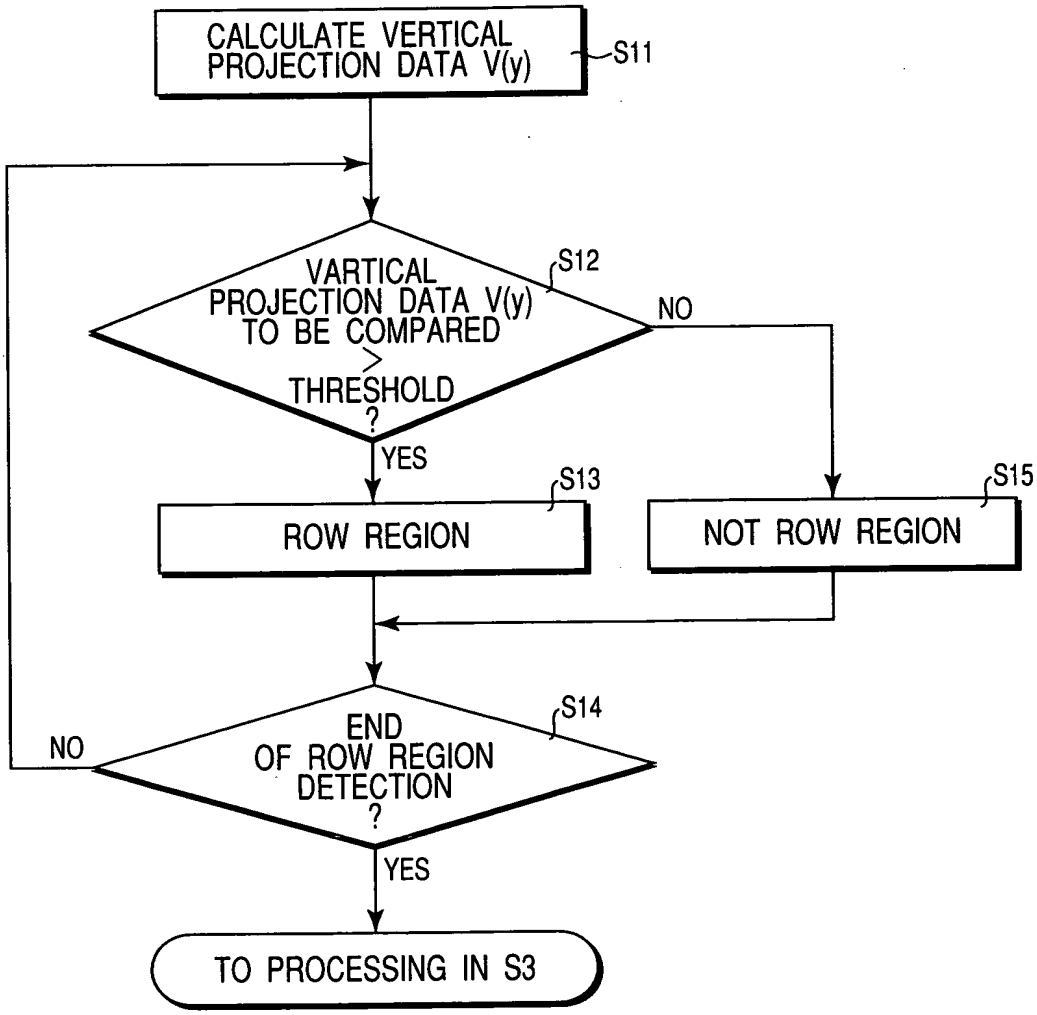

CALCULATE VERTICAL PROJECTION DATA V(y)
S11
VARTICAL PROJECTION DATA V(y) TO BE COMPARED > THRESHOLD ?
S12
NO
YES
ROW REGION
S13
NOT ROW REGION
S15
END OF ROW REGION DETECTION ?
S14
NO
YES
TO PROCESSING IN S3

FIG. 6

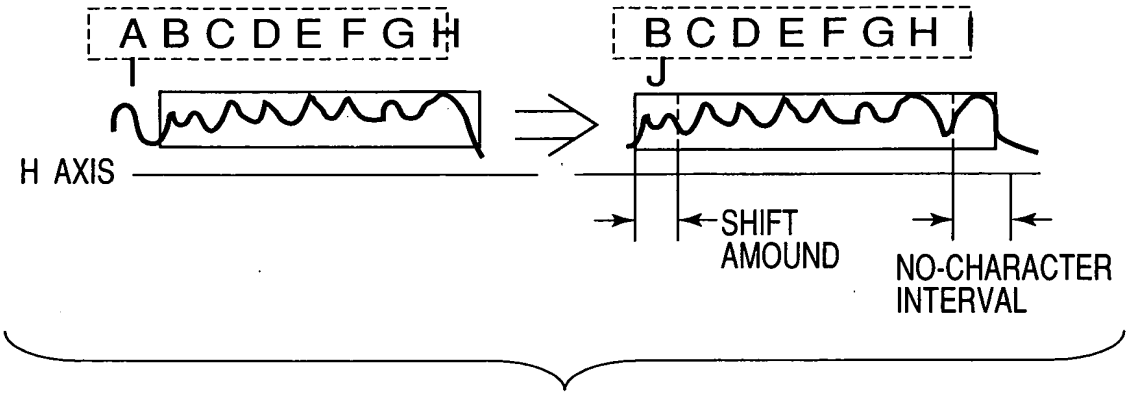

A B C D E F G H
I
B C D E F G H I
J
H AXIS
SHIFT
AMOUND
NO-CHARACTER
INTERVAL

FIG. 7

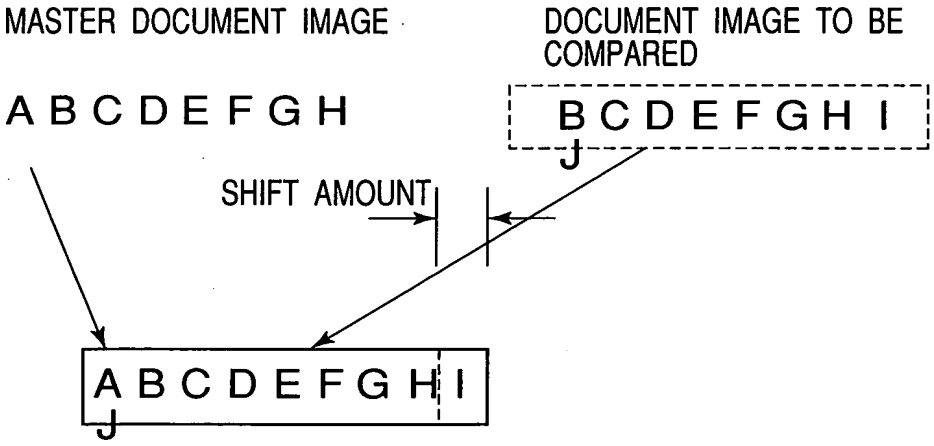

MASTER DOCUMENT IMAGE
A B C D E F G H
DOCUMENT IMAGE TO BE
COMPARED
B C D E F G H I
J
SHIFT AMOUNT
A B C D E F G H I
J

FIG. 8

LANDSCAPE DOCUMENT

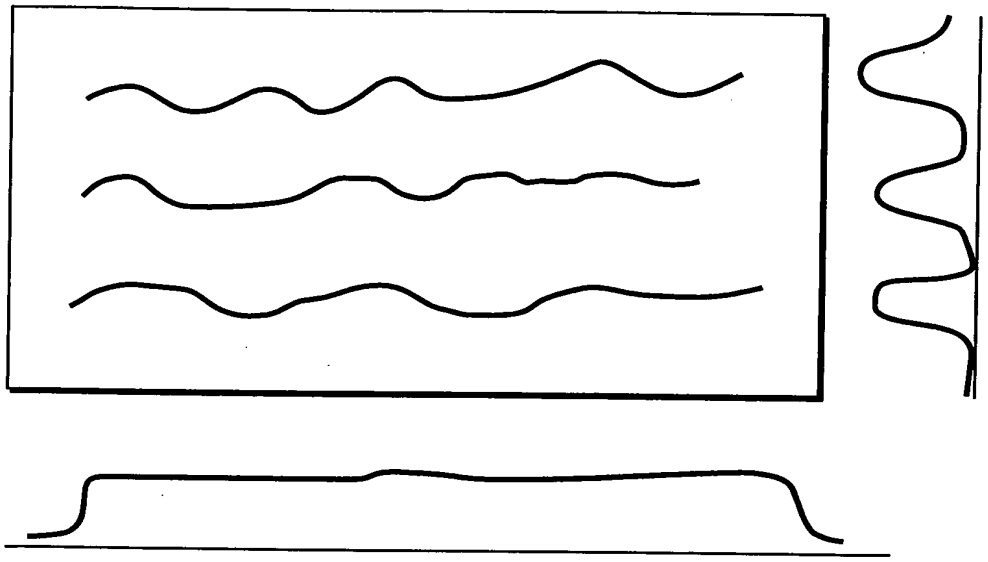


FIG. 9

PORTRAIT DOCUMENT

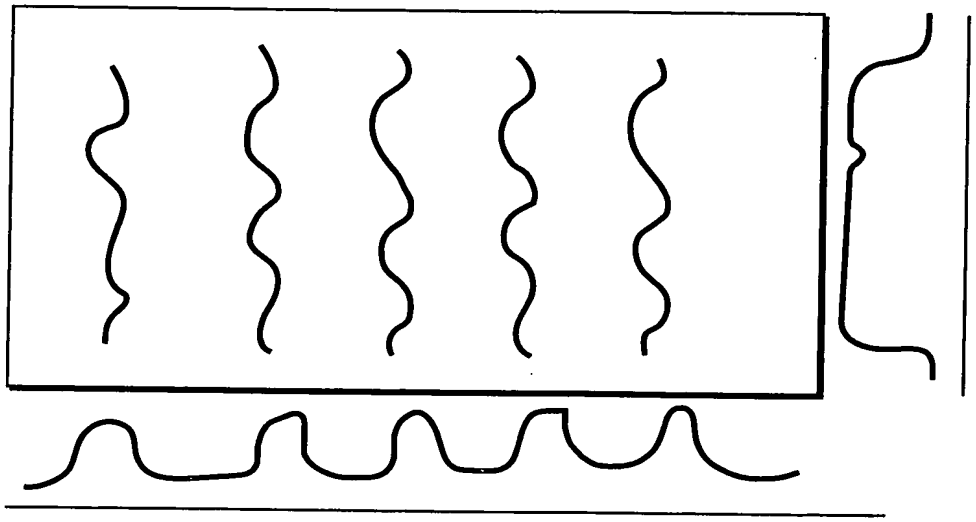


FIG. 10

0 0 0 2 5 4 5 5 . 0 5 2 0 0 4

0050465 050804

FIG. 11

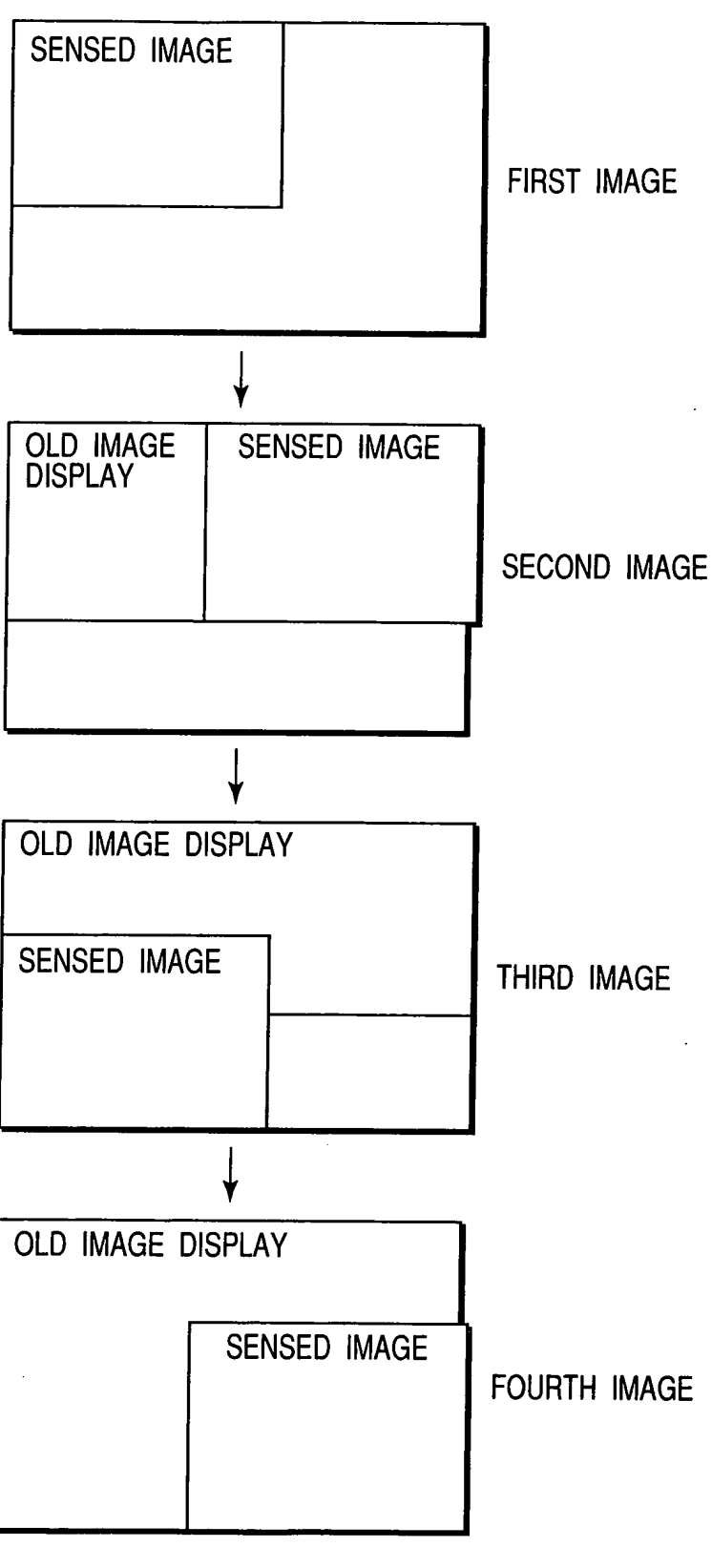


FIG. 12

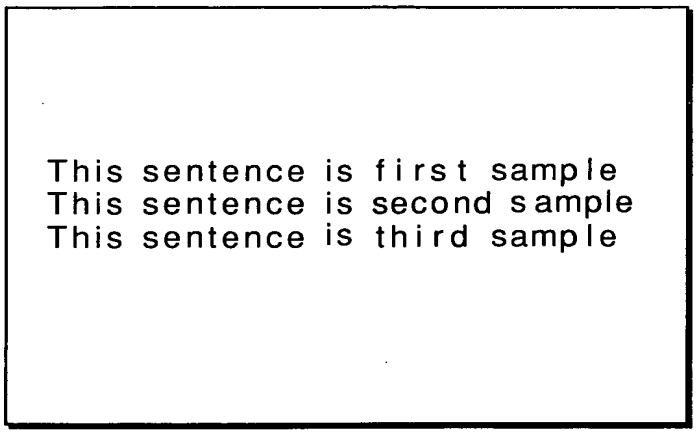


FIG. 13

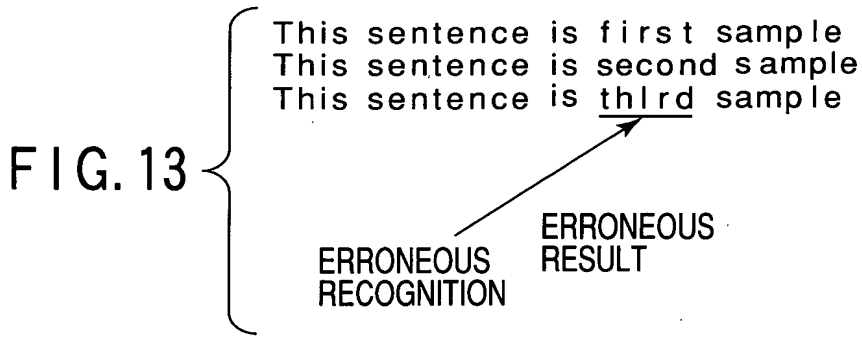
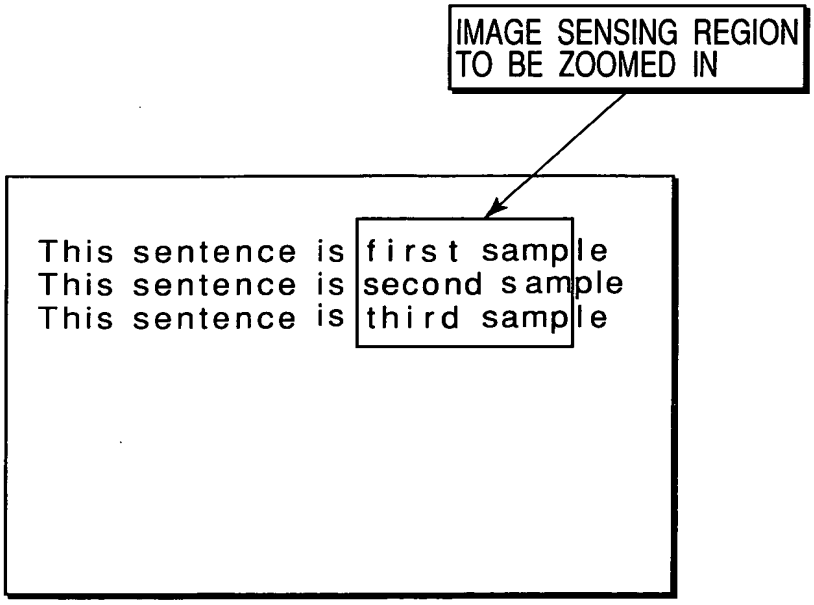


FIG. 14



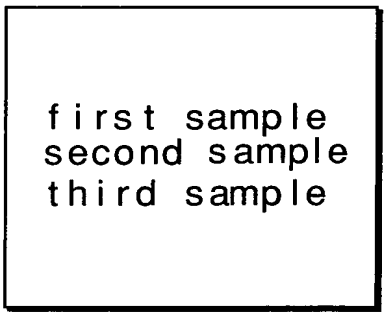

first sample
second sample
third sample

FIG. 15

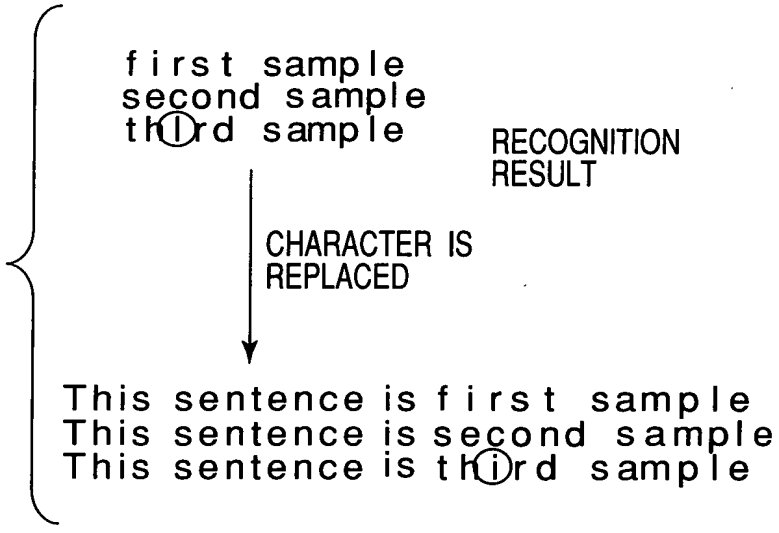

first sample
second sample
th(i)rd sample
RECOGNITION RESULT
CHARACTER IS REPLACED
This sentence is first sample
This sentence is second sample
This sentence is th(i)rd sample

FIG. 16

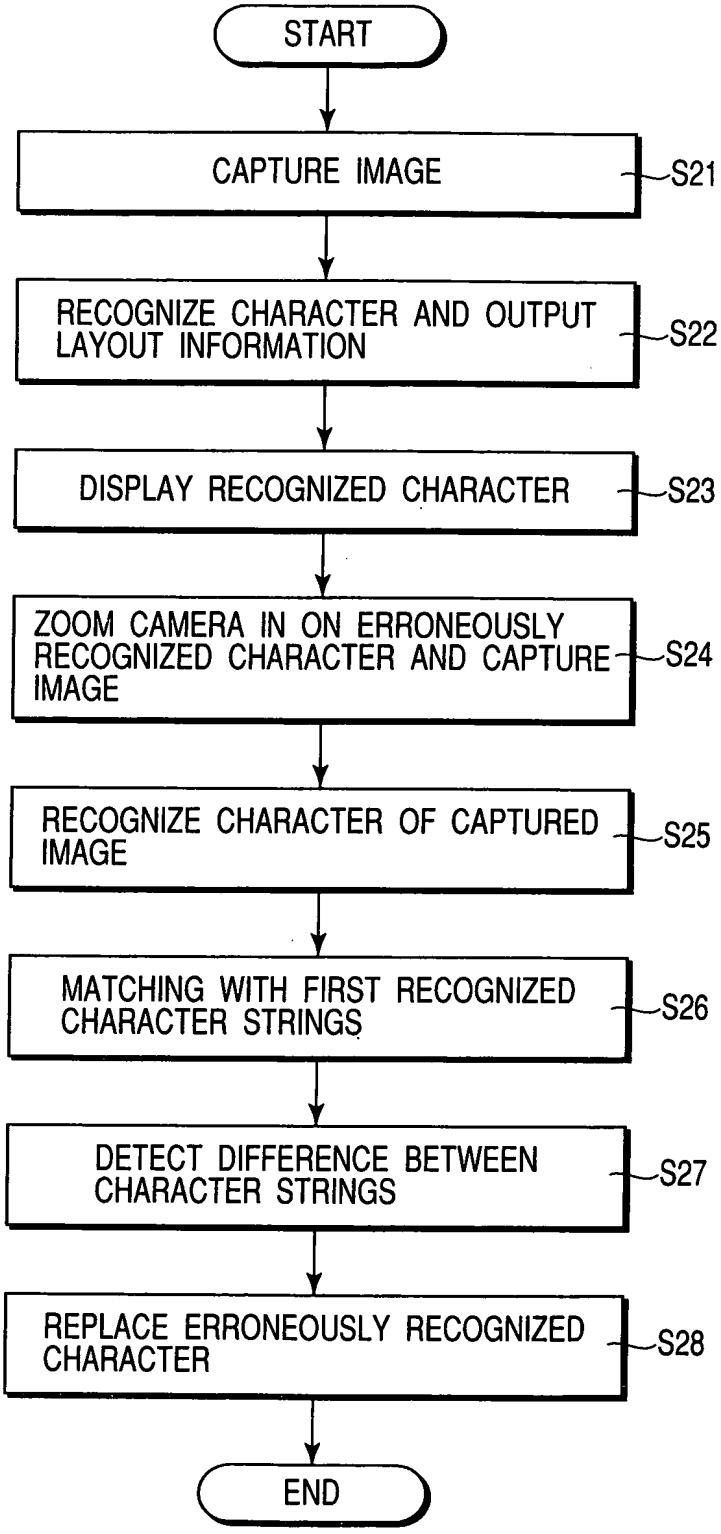

START
CAPTURE IMAGE
S21
RECOGNIZE CHARACTER AND OUTPUT LAYOUT INFORMATION
S22
DISPLAY RECOGNIZED CHARACTER
S23
ZOOM CAMERA IN ON ERRONEOUSLY RECOGNIZED CHARACTER AND CAPTURE IMAGE
S24
RECOGNIZE CHARACTER OF CAPTURED IMAGE
S25
MATCHING WITH FIRST RECOGNIZED CHARACTER STRINGS
S26
DETECT DIFFERENCE BETWEEN CHARACTER STRINGS
S27
REPLACE ERRONEOUSLY RECOGNIZED CHARACTER
S28
END

FIG. 17